LEADING SECTORS FOR US EXPORTS AND INVESTMENT

Leading sector prospects are based on percentage of increase over the past two years, not total expenditure.

Non-Agricultural Products and Services

Rank of sector: 1
Name of sector: Oil and Gas-Field Machinery & Services
ITA Industry Code: OGM

Narrative:

Oil has formed the backbone of the UAE economy and will continue to play a significant role, as there is an estimated 100 years of production left to be extracted. Central Bank data indicate the UAE's continued reliance on crude oil exports, despite high profile efforts to diversify the economy. UAE oil production capacity is currently at 2.3 million barrels per day (mb/d). It should rise to 3.0 mb/d by 2006. Abu Dhabi Company for Onshore Operations (ADCO) plans to lift production to 1.45 mb/d, Abu Dhabi Marine Operating Company (Adma-Opco) to 600,000 barrels per day (b/d) and Zakum Development Company (Zadco) to 650,000 b/d over the next three to five years. As part of the effort to improve and sustain output, the state-run Abu Dhabi National Oil Company (ADNOC) has tendered the privatization of a 28 percent stake in the off-shore ZADCO. ExxonMobil, ChevronTexaco, Shell, BP, and TotalFinaElf are participating in this contest, with an outcome expected towards the end of 2003.

Abu Dhabi produces 2 mb/d, making it the wealthiest and most powerful of all seven emirates. Dubai produces approximately 150,000 b/d and Sharjah and Ras al-Khaimah bring in about 10,000 b/d. Ajman and Umm al-Quwain hope to exploit hydrocarbon reserves to become gas producers. Abu Dhabi is expanding production capability beyond OPEC quotas to counter an expected decrease in Dubai production. ADNOC plans to develop downstream capabilities and expand crude oil production capacity. ADNOC has controlling shares in all major oil and gas ventures in the emirate. An estimated US $5 billion of project work is either at the Front-End Engineering and Design (FEED) stage or about to be tendered to Engineering, Procurement & Construction (EPC) contractors.

The emphasis in Abu Dhabi's oil sector during the next twelve months will be on the implementation of several major upstream projects aimed at increasing the emirate's production capacity by at least 600,000 b/d. This will bring ADNOC a step closer to its target of increasing production capacity to 3 mb/d by 2006.

Following the early March award of a US $91 million EPC contract for the Bab field upgrade, ADCO plans to open two more EPC contracts totaling at least US $950 million by late summer 2003. They will cover the Northeast Abu Dhabi (NEAD) field development and the Bu Hasa field upgrade.

ADCO is also in the process of tendering the EPC contract for the Bu Hasa production facilities upgrade and reservoirs development project. Estimated to cost US $320 million, the 32-month contract's scope of work includes the construction of a new degasification plant with a capacity of 730,000 b/d; the replacement of the existing two-

phase gas separators of 50,000 b/d; and four new three-phase separators, 120,000 b/d each. The project will also entail the installation of facilities for the re-injection of 95 million cubic feet per day (mcf/day) of gas and 120,000 b/d of water into the three reservoirs.

Two more projects, covering the Huwaila, Asab and Shah fields, are scheduled to be tendered later this year. When completed by 2005/06, they will add a further 25,000-30,000 b/d of capacity.

Major oil field development work is also planned offshore. Adma-Opco plans to invest over US $1.2 billion in the Umm Shaif field. About 600 million cubic feet a day of gas will be re-injected into the reservoirs to maintain pressure and increase output. The EPC package is due to be tendered in late 2003.

Oil production capacity is also targeted to increase through the de-bottlenecking of existing trains on Das and Zirku islands. About US $100 million of investment is planned, increasing capacity by 200,000 b/d.

Adma-Opco is also planning drilling new wells on the offshore Zakum field. The project will comprise the supply and installation of two wellhead towers and modifications to an existing unit, three sub-sea in-field pipelines and related works. The scheme will be tendered to EPC contractors by the end of 2003.

Substantial investment is also planned for the gas sector with projects worth over US $2.7 billion in the pipeline. The largest scheme is the third phase of the onshore gas development (OGD-3) and the second phase of the Asab gas development (AGD-2), which is due to be tendered by late 2003.

The project will produce additional volumes of condense and natural gas liquids (NGL). The client is Abu Dhabi Gas Industries Company (Gasco), which is also planning the construction of a 118-kilometer pipeline to transport liquid sulfur from Habshan to Ruwais. The product is at present being carried in trucks.

In the coming year, downstream will continue to focus on brown-field expansions aimed at maximizing existing resources.

Abu Dhabi Oil Refining Company (Takreer) issued in June 2003 the Front End Engineering and Design (FEED) tender for the Inter-Refinery Pipelines (IRP) project. Expected to cost around US $200 million, this project includes the supply and installation of a multi-products pipeline from Ruwais to Mussafah; a gas-oil, naphtha, and jet fuel pipeline from Umm al-Nar to Ruwais; and a jet fuel pipeline from Mussafah to receiver facilities at Abu Dhabi International Airport. IRP will also have a multi-products pipeline to tie in at Maqta with the existing Umm al-Nar Al-Ain pipeline.

Takreer is also bidding a US $50 million project to build a major hazardous waste treatment plant at Ruwais. Called the central environment protection facilities (BeAAT), the new plant will treat and dispose of hazardous waste produced by ADNOC and its subsidiaries.

In May 2003, Abu Dhabi Gas Liquefaction Company (Adgas) issued a tender for the new liquefied petroleum gas (LPG) train planned on Das Island. Estimated to cost US $450-

500 million, the project involves the addition of a new LPG train with capacity of about one million tons per year (t/y). The new train will process some 220 mcf/d of associated gas through gas compression, acid gas removal, gas drying, pre-cooling and fractionation. Adgas already operates three liquefied natural gas (LNG) trains on Das Island, with combined production of about 5.4 million t/y. It also produces 1.7 million t/y of LPG, 535,000 t/y of pentane and 338,000 t/y of sulfur.

On another front, Abu Dhabi-based Dolphin Energy Limited (DEL) is moving forward with the implementation of its US $3.5 billion Dolphin Project that involves the production and processing of natural gas from Qatar's North Field and transportation of the dry gas by pipeline to the UAE. Six EPC packages are planned for the entire project. The largest of these packages are for onshore gas processing and compressor plant in Ras Laffan and they cover the supply of compressors and gas turbines, the offshore platforms, and 440 km, 48-inch gas export sub-sea pipeline.

In March 2003, DEL announced the bidding of EPC packages to serve the upstream element of the project. DEL is also expected to bid by August 2003 a contract to build a gas compression and treatment facility at Ras Laffan. The US $1,3 billion facility will have capacity to handle 2.6 billion cf/d of gas.

Activity outside Abu Dhabi is also picking up. Sharjah continues to extract an estimated 600 mcf/d through Amoco Sharjah Oil company, part of BP, operating the onshore gas fields of Kahaif, Sajaa, and Moveiyad. Hopes of new discoveries are also pinned on other onshore Sharjah concessions. Drilling activities are under way in offshore Fujairah to evaluate possible commercial finds.

Gulf Energy Company issued a tender in June 2003 for the EPC contract to build a 150 mcf/d gas-processing and sweetening plant, test separators, slug catchers, storage facilities and civil works for a control system in Ras Al Khaimah. Gulf Energy Company is a joint venture between Atlantis Holdings Norway and Dolphin Investment Company and is part of Abu Dhabi-based UAE Offsets Group.

Although US suppliers and engineering companies dominate this industry, competition from European and Japanese firms, such as Schlumberger, Technip, Mitsui, Kvaerner, Mott McDonald, Tebodin, Pencol, Stork Engineers & Contractors, JGC, Chiyoda, Snamprogetti, Saipem, Siemens, and Mitsubishi, is intense.

In 2003 the US enjoyed a 45 percent market share. No regulatory/demand issues affect the market.

The most promising sub-sectors within this sector, with the estimated 2003 Total Market Size of each:

Major Sub-Sectors	Estimated Market Size
Liquid Natural Gas Equipment	240
Drilling Equipment: Oil and Gas	290
Chemicals	190
Instrumentation	90
Petrochemical Equipment	90
Services: Oil and Gas	660

Data Table:

	2001	2002	2003
Total Market Size	950	1,400	1,560
Total Local Production	0	0	0
Total Exports*	85	90	90
Total Imports	1,035	1,490	1,650
Total Imports from the US	380	670	740

The above statistics are unofficial estimates in millions of US dollars
Exchange rates used US $1= 3.673 dirhams.
NOTE: Re-exports indicated where total imports exceed market size. All figures are estimates in millions of USD.

Rank of Sector: 2
Name of Sector: Pollution Control Equipment
ITA Industry Code: POL

Narrative

In the last 10 years, the UAE has taken significant steps to protect the environment. These include: the establishment of the Federal Environmental Agency (FEA) in 1993; the creation of the Environmental Research and Wildlife Development Agency (ERWDA) in Abu Dhabi in 1996; the establishment and the full implementation of the UAE Federal Environmental Law 24 of 1999; the adoption of programs by municipalities for better environmental practices; the creation of separate entities by the major industrial institutions for the protection of the environment; the treatment and disposal of solid and medical waste; the treatment of wastewater, and several other initiatives.

According to World Bank estimates, the UAE is expected to invest US $46 billion over the next decade on environmental and pollution control projects. These projects are linked to the oil and gas industries, conservation of water and power generation, waste management, land management and air pollution.

The UAE production of water is approximately 170 billion gallons per year of which 80 percent is desalinated seawater. An estimated US $3.54 billion will be spent on improving water resources in the next 20 years because the need for water in general and desalination water in particular will triple by the year 2020. The growing population, increasing from 2.6 million in 1998 to 3.8 million in 2002, puts more demand on the country's resources. The average consumption of water per person in the UAE is approximately 133 gallons per day. Nearly all of the wastewater in the emirate of Abu Dhabi is treated and used to turn large areas of desert into green areas. Almost half of the wastewater in the northern emirates is also treated and used for irrigation. Treated wastewater is used in fish hatcheries, farms, municipal and commercial sewer systems, as well as industrial toxic waste treatment. The resulting sludge is disinfected and used as a natural fertilizer. Wastewater Ozonation treatment systems support a wide range of activities, from reduction of biological waste to complete purification and sanitation as required by the drinking water quality standards. Industrial firms vying for ISO accreditation rely on water recycling as an important step forward in their march towards environmental friendliness.

ADNOC and its group of companies are addressing vital environmental issues under their new Health Safety and Environment (HSE) policy and objectives. These include elimination of hydrocarbon flaring; abolition of continuous venting of hydrocarbon disposal; optimization of land use and energy resources; re-injection of produced water and other effluents. HSE also examines ways to minimize the use oil-based muds and the disposal of drilling muds and cuttings so as not to contaminate the environment. IT also looks at reducing and controlling solid and other wastes, including treatment and disposal as per international standards. Most importantly, HSE not only plans the clean up oil and chemical spills, but works to prevent oil and chemical spills.

The UAE generates approximately 561,000 tons per day of solid waste, which includes household, commercial, industrial, animal, agricultural, and medical waste. The Abu Dhabi Municipality is investing US $84 million on a Solid Waste Management Center.

More than 40 percent of the UAE municipal solid waste can be recycled and reused. An additional 30 to 40 percent of the waste can be made in compost and used as fertilizer. The Abu Dhabi Municipality plans to privatize the collection and transfer of solid waste. The northern emirates also have plans for investing in upgrading and improvement of its solid waste management.

A Royal Decree was recently issued on medical waste of hospitals in Abu Dhabi. The decree calls for a total ban on disposing of medical waste in containers not designed for this purpose. It stipulates that all health centers should separate their medical waste from other waste material, then disposed of it in specially designed containers supplied by the municipality. Approximately 11 to 13 tons per day of medical waste, including infectious and non-infectious wastes, are generated in the UAE.

The air pollution in the UAE is mainly due to power generation and transformation plants, vehicles and industrial emissions. The number of cars in the emirate of Abu Dhabi has increased from 40,448 in 1991 to 98,589 in 1995 and it is expected to reach 230,000 by end of 2003. Based on a resolution by the Higher Council of Leaders of the Gulf Cooperation Council (GCC) issued in December of 1998, the UAE has phased out leaded gasoline and is replacing it with unleaded gasoline as of January 1, 2003. Vehicles that are not equipped for unleaded gasoline have two options, either use the unleaded gasoline with special chemicals added to it to make it useable or add catalytic converters to their cars. By 2007 all vehicles in the UAE should either have the catalytic converters or be equipped for unleaded gasoline.

The UAE in general and Abu Dhabi in specific are well known for the construction of new building towers. Buildings that are 15-20 years old are knocked down and replaced by new, taller ones. Dust resulting from the demolition of old buildings is enormous. However, the used iron bars are recycled by smelters in order to be re-used while the cement fragments are crushed and treated for re-use in the landfill operations.

The Federal Environment Agency and the General Secretariat of Municipalities spend millions of dollars annually on environmental feasibility studies, awareness campaigns and development of human resources for carrying out environmental missions.

Article 4 of the UAE Federal Environmental Law # 24 mandates that the implementation of any project in the UAE requires an Environmental Impact Assessment (EIA) to ensure that the project does not adversely affect the environment. An application for an environmental permit has to be submitted for any proposed project by the project proponent/owner to the Environmental Research and Wildlife Development Agency (ERDWA), which will decide whether the project needs a comprehensive EIA, a limited EIA or no EIA. Once it is decided that an EIA is needed, the project proponent (or his consultant) has to prepare the EIA scope of work. The latter will be reviewed by ERWDA, which approve the project based on the review of the EIA study report. ERWDA will also oversee the implementation of the EIA recommendation. A law is currently being drafted for the emirate of Abu Dhabi whereby all EIAs should be carried out by only pre-qualified consultants. ERWDA has been tasked to pre-qualify environmental consultants.

There is minimal local production for environmental protection equipment and supplies in the UAE. However, water pipes, fertilizers, cement, paper products, nylon bags, valves, and other items are locally produced. US manufacturers and exporters enjoy an

excellent reputation for product technology, quality and durability and the US market share is expected to increase. US companies face tough competition from the Europeans in the UAE, who generally have offices here and travel frequently to the region. Providing after-sale maintenance services is essential and US companies are advised to establish a presence in the UAE to be able to compete. In general, US companies with manufacturing presence in the UAE and the GCC are most likely to be able to compete in the UAE market, given the relatively low cost of production compared to other places. The UAE enjoys a free trade market system. An over-the-board custom duty of five percent applies to all imports with exception of few items. There are no restrictions on foreign exchange and money transfer operations.

The most promising sub-sectors within this sector, with the estimated 2003 Total Market Size of each in millions of US dollars:

Major Sub-Sectors	Estimated Market Size
Solid Waste	123
Wastewater	54
Medical Waste	3

Data Table:

	2001	2002	2003
Total Market Size	94	140	180
Total Local Production	0	0	0
Total Exports*	7	7	9
Total Imports	101	147	189
Total Imports from the US	33	40	45

The above statistics are unofficial estimates in millions of US dollars.
Exchange rate US $1 = 3.671.

- Note: Re-exports indicated where total imports exceed market size

Rank of Sector: 3
Name of sector: Medical Equipment
ITA Industry sector code: MED

Narrative:

The UAE has seen remarkable progress in health care and comprehensive health programs have been adopted to meet the needs of UAE society. Currently the UAE has a comprehensive, government-funded health service and a developing private health sector. The Ministry of Health (MOH) budget has increased from US $274 million in 1991 to US $425 million in 2001 with an average increase of 4.39 percent per year. Approximately 5.5 percent is spent on medical machines, tools, and supplies.

Health care infrastructure has kept pace with other health care developments to ensure that adequate services are provided in the emirates. In 1971, there were only seven hospitals and 700 beds in the UAE. By year 2001 the number of hospitals had risen to 62 with 7,512 beds. The number of physicians had risen to 6625 and nursing staff to 11,466. The number of clinics and health centers had also increased from 21 to 106 well-equipped modern primary health centers and 10 Mother & Child Health Care Centers. Twenty-six of the hospitals with 4,107 patient beds are run by the MOH. Four hospitals with 1,236 beds are run by the General Authority for Health Services for Abu Dhabi. Another four hospitals with 1,504 beds are run by Dubai's Department of Health and Medical Services. The Department of Defense runs 4 hospitals. Moreover, there are three private non-profit hospitals with 148 beds, 21 privately owned hospitals with 827 beds, 1019 privately owned clinics, and 1 hospital with 36 beds run by Abu Dhabi National Oil Company.

The Government plans for expansion and upgrade of health care systems are ongoing. The construction of seventeen public hospitals, including extensions to existing hospitals, will add 1,800 beds in various medical outlets and nearly double the public hospital bed capacity in the UAE over the next 10 years. The MOH has actually allocated US $58 million from its 2002 budget for new projects that include several health centers and specialty hospitals all over the UAE. The Government plans include the upgrade and expansion of current hospital facilities and services. Moreover, the MOH has granted licenses for the establishment of five new private hospitals in Abu Dhabi and Al Ain with a capacity of 250 beds.

On November 5, 2002, Dubai launched the Dubai Healthcare City (DHC) project. This new project will create a global healthcare center hub in Dubai. The total cost of this project is estimated at US $1.8 billion and is expected to be completed and fully operational by 2010. DHC will include medical education and a research center, specifically addressing postgraduate schools and on the job education and clinical research. It will include a leading and innovative business center leveraging the integration of technology and healthcare services (e.g. Tele-Health, E-enabled services). The DHC project consists of three medical clusters: 1) The University Medical Complex which includes a University Hospital, a Medical School, a Nursing School, and a Life Sciences Research Center; 2) The Medical Cluster which includes Day Clinics, a Specialized Diagnostic Laboratory, and a Rehabilitation Center; and 3) The Wellness Cluster which includes, Check up Clinics and Sports Medicine.

In 2002, the UAE market for medical equipment and supplies was estimated at US $281 million with US imports accounting for 28 percent of the total. With the recent increase in the Euro exchange rate, the demand for US medical equipment in the local market is noticeable increasing. Major US imports are diagnostic, therapeutic and patient monitoring equipment, which are perceived to be high technology and state of the art. US medical equipment and supplies as well as healthcare technology and services are considered of high reliability and are preferred. The US commands a major market share with regards to imaging and monitoring equipment, ventilators, and life support and operating theater equipment. Local production accounts for only 6.9 percent of the market for medical equipment and supplies. Thirteen percent of imports and locally produced medical supplies are re-exported. Besides the US, the UAE imports medical equipment and pharmaceuticals from France, Germany, Italy, UK, Italy, Sweden, and Japan. Companies exporting medical equipment to the UAE are required to have a local agent registered with the MOH. Medical equipment carries a five percent import duty, as do most exports to the GCC states since the January 2003 Customs Standardization.

The most promising sub-sectors within this sector, with the estimated 2003 Total Market Size of each in millions of US dollars:

Major Sub-Sectors	Estimated Market Size
Diagnostic equipment	65
Therapy & Rehabilitation equipment	57
Disposables	50
Monitoring Equipment	45
Medical Aids	30
Surgical	20
Other	56

Data Table:

	2001	2002	2003
Total Market Size	244	281	323
Total Local Production	17	20	22
Total Exports	1	1	1
Total Imports	228	262	302
Total Imports from the US	66	76	87

The above statistics are unofficial estimates in millions of US dollars.
Exchange rate US $1 = 3.671
Note: Re-exports indicated where total imports exceed market size.

Rank of sector: 4
Name of Sector: Architecture/Construction/Engineering
ITA Industry Code: ACE

Narrative:

New investments in the construction and tourism sectors of over US $20 billion will insure that building activity will offer a wide range of opportunities in the Architectural, Construction, Engineering services. Current and future projects include:

- The World Islands (US $4 billion):
The client is Al Nakheel Properties, known previously as Dubai Palm Developers. Parsons Corporation is the design-engineering consultant. The World Islands is the third offshore tourism project being constructed by Al Nakheel Properties. The two other projects are Palm Jumeirah and Palm Jebel Ali, both being built in the shape of a palm tree off Dubai's coast.
The World project calls for the construction of a major tourism cluster of offshore islands off the coast of Dubai. Each island will be home to hotels, residential apartments and entertainment facilities. A series of man-made islands positioned to form the shape of the world map. Each island will vary in size and will have a theme to show a close similarity to the country it represents. There will be no road access to the islands and two types of breakwater will surround the islands. Bids were submitted by May 11, 2003 for the dredging and reclamation package. The 20-22 month contract calls for dredging of up to 130 million cubic meters, reclamation and the construction of an 18-kilometre breakwater. For additional information on this project, please contact: The Palm, P.O. Box 17777, Dubai, United Arab Emirates, Phone: (9714) 390 3333; Fax: (9714) 390 3314, web site: www.thepalm.co.ae

- China Town (US $650 million):
Client is Al Nakheel Properties. Associated Consultants Engineers (ACE) International of Lebanon is the architectural consultant. Project calls for the construction of 25 buildings in two stages. Chinamex Apartments -1 will cover the construction of 13 buildings, each of four-five storeys, with a total built-up area of about 1.2 million square feet. Chinamex Apartments -2 will include the construction of 12 buildings, each of four-five storeys, with a total built-up area of about 1 million square feet. In addition to the building, a shopping mall and related facilities to be built in the shape of a dragon over 150,000 square meters and a 30,000-square-feet warehousing facility known as, Chinamex mart. Companies submitted bids on May 31, 2003 for the estimated AED 200 million (US $54 million) infrastructure package that will cover the construction of roads, car parking, storm water drainage and sanitary disposal facilities and electrical works. Construction of residential apartments, hotels, a shopping mall, entertainment facilities, and warehousing is being tendered in four packages. For additional information on this project, please contact: The Palm, P.O. Box 17777, Dubai, United Arab Emirates, Phone: (9714) 390 3333; Fax: (9714) 390 3314, web site: www.thepalm.co.ae

- Two Palm Islands (US $3 billion):
Client is Al Nakheel Properties. The project is managed by a group of US consultants headed by Hill International and Parsons Corporation. The Palm Islands project focus on the creation of two man-made palm tree shaped islands - Palm Jumeirah and Palm Jebel Ali. Each island will be in the shape of a palm tree with 17 fronds and a trunk. The islands will each extend 5 kilometers offshore and will be 5 kilometers in diameter. Each

island will be built from about 80 million cubic meters of sand and rock dredged from the seabed or to be mined from quarries. Some 2,000 villas, 40 luxury boutique hotels, two marinas and a water theme park will be built on the islands, as well as bridges, tunnels, shopping complex and related entertainment facilities. Dredging and land reclamation works are currently going on at the Palm Jumeirah Project. In November 2002, the client awarded two contracts worth a total of US $270 million to Van Oord of the Netherlands and Geneva-registered Archirodon Construction (Overseas**)** to carry out the marine works on the first island. For additional information on this project, please contact: The Palm, P.O. Box 17777, Dubai, United Arab Emirates, Phone: (9714) 390 3333; Fax: (9714) 390 3314, web site: www.thepalm.co.ae

- Dubai Lost City project (US $165 million):
Client is Al Nakheel Properties. DMJM International is the project manager. Project calls for the design and construction of a hotel, a swimming pool and several recreational facilities at the Dubai Lost City project. The project calls for the construction of: a 340-room five-star hotel, over 72,000 square meters; 24 suites; and 20 poolside cabana rooms. This project will include the construction of an artificial rainforest, waterfalls, aquatic features, desert areas, an oasis, seven restaurants and related facilities. The proposed swimming pool will be constructed 7 meters below ground level. The proposed hotel, to be called Cavern/Garden, will be 37 meters high and will be constructed close to the pool. The facilities will be located adjacent to Jebel Ali Village off Shaikh Zayed highway. Client received early this year bids from three local companies for the construction of a five-star hotel, a swimming pool and several recreational facilities. For additional information on this project, please contact: The Palm, P.O. Box 17777, Dubai, United Arab Emirates, Phone: (9714) 390 3333; Fax: (9714) 390 3314, web site: www.thepalm.co.ae

- Gardens Shopping Mall (US $200 million):
Client is Al Nakheel Properties. Hill International is the project manager and Callision Architects is the design engineers. A new upscale shopping mall is expected to be completed by 2004. The mall will exhibit five country theme-shopping zones (Morocco, Egypt, Persia, India and China) -- over a total built area of 5.4 million scare feet including parking for over 5,000 cars. For additional information on this project, please contact: The Palm, P.O. Box 17777, Dubai, United Arab Emirates, Phone: (9714) 390 3333; Fax: (9714) 390 3314, web site: www.thepalm.co.ae

Dubai is currently expanding its hotel capacity. Over 120 new hotels are expected to be constructed during the next five years. These include 80 hotels on the two Palm Islands projects. Additionally, Dubai Festival City in under construction as Dubai develops its role as a tourist destination.

All major projects require international construction project management firms to supervise work execution; US companies enjoy an excellent reputation for such services. There are no regulatory /demand issues affecting the market for ACE services.

The most promising sub-sectors within the building products sector, with the estimated 2003 Total Market Size of each in millions of US dollars:

Major Sub-Sectors	Estimated Market Size
Petrochemical Engineering Services	92

Civil engineering services	86
Hotel A/C/E/services	23
Airport & port development	18

Data table:

	2001	2002	2003
Total Market Size	253	270	292
Total sales by local firms	60	64	70
Total sales by foreign firms	193	206	222
Total sales by US owned firms	46	49	60

The above statistics are unofficial estimates in millions of US dollars.
Exchange rate: US $1 = 3.671

Rank of sector: 5
Name of sector: Power and Water
ITA Industry Code: PTE/WRE

Narrative:

Since late 1998 Abu Dhabi has striven to lead the Gulf region in the power privatization, with four Independent Water and Power Projects (IWPP) already commissioned and under construction and two new mega projects to be awarded in the coming year. UAE has one of the highest per capita rates of water consumption in the world and demand is expected to reach 790 million gallons per day (mg/d) by 2010 from current pick of 465 mg/d. UAE per capita consumption of water is estimated at 133 gallons per day (g/d), compared with 85 g/d in the US. Demand for electricity is also on a steady rise in the UAE and is expected to reach 14,600 MW in 2010; the current installed generating capacity is around 10,000 MW.

The UAE has spent over US $5 billion to develop power and water desalination projects in the past four years and will probably spend US $4 billion more in the next 5-7 years, with several projects in the pipeline. Over the years, the Abu Dhabi government has realized the benefits of allowing foreign companies invest in the generation side of the capital's power sector bringing new cost efficient technologies and know how. Currently, 32 percent of Abu Dhabi's generation and desalination capacity is in private hands. This figure is expected to increase to 54 percent for power and 42 percent for water by 2004 and sources indicate that the government has plans to privatize 100 percent of Abu Dhabi's capacity by 2007.

Dubai Electricity and Water Authority (DEWA) will continue to invest heavily to raise power generation and desalination capacity to catch up with the soaring residential and commercial developments. In June 2003, DEWA awarded a series of packages for the proposed US $700 million Jebel Ali L Station that will add 700 MW of power and 85 mg/d in desalination capacities upon completion in 2005. DEWA is also planning the implementation of a second phase to this project that will double the output of electricity and water.

By end of 2002, Dubai's power capacity had risen to 2,976 MW compared with 2,579 MW the previous year. Dubai's average daily peak consumption has varied between 2,400 MW during summer and 1,200 MW in the colder season. On water, DEWA's current installed capacity is 200 mg/d, up from 175 mg/d in 2001.

In July 2003, Abu Dhabi Electricity and Water Authority (ADWEA) received revised bids for the Taweelah Reverse Osmosis (RO) project. The estimated US $300-400 million project involves construction of a 50 mg/d RO plant. The selected foreign partner will take a 40 percent stake in a new project company, which will build, own, and operate the facility. It will also arrange the debt finance. The RO plant will take advantage of spare power generating capacity at Taweelah in the winter months, when electricity demand can be as low as 35 percent of the peak summer level. The water will be used to meet agricultural demand in the Al-Ain area.

In April 2003, ADWEA awarded the Umm al-Nar IWPP to a consortium of UK/Japanese developers. With the bulk of existing capacity not due to be decommissioned until 2008, Umm al-Nar's contracted capacity for a two-year period will be 2,200 MW of power and

143 million g/d of water. The total project cost is estimated at US $2.1 billion of which US $1 billion will cover the acquisition of the existing plant and US $800 million for the new build works. Besides taking over the existing Umm al-Nar plant, the project will install new generating and desalination capacity. All the existing 850-MW generating capacity will be decommissioned in phases and replaced by 1,550 MW of new build. Of the existing 162 mg/d of desalination capacity, about 70 mg/d of recently installed capacity will be retained, with the remainder decommissioned. In addition, 25 mg/d of new multi-stage flash capacity build will be constructed. The entire project is expected to be completed in 2006.

The next planned project in ADWEA's IWPP program will be the acquisition and expansion of the Mirfa plant in the western region. Mirfa, which has a capacity of almost 200 MW and 16.2 mg/d, will be expanded through the addition of 600-700 MW and 22.5 mg/d of new capacity. Requests for proposals for Mirfa is schedule to be sent out in the fourth quarter of 2003.

Sharjah Electricity and Water Authority (SEWA) announced in early 2003 the approval of a US $440 million budget by the Emirate for an ongoing expansion plan. US $25 million of the approved amount will go towards current, operational, and semi-capital projects, while US $145 million will be spent on new projects. The latter includes US $60 million for the purchase and installation of a 200 MW gas generator at the Wasit power station. SEWA is also in the process of expanding its natural gas distribution network, and in late 2002 it awarded a project that involves the supply and installation of internal connections to more than 2,500 residential and commercial customers.

In June 2003, the Union Electricity and Water Company (UWEC) announced the construction of Fujairah Phase II with a capacity of up to 1,000 MW of power and 100 mg/d of desalination. UWEC wants to implement the project on a fast-track basis, with the award of the engineering, procurement and construction (EPC) package scheduled by the end of the year. Fourteen international and local companies have applied for pre-qualification. Completion of Phase II is set for the summer of 2006. UWEC also recently signed a US $40 million contract with Sogex Oman for the operation and maintenance of Fujairah Phase I with a capacity of 656 MW and 100 mg/d of hybrid desalination capacity. The five-year contract also covers the 179-kilometer dual pipeline being laid from the plant to Suweihan to pump up to 180 mg/d of water.

The Ministry of Electricity & Water (MEW) is expected to award contracts for the implementation of the Emirates National Grid project (ENG) by the end of 2003. The packages for the estimated US $220 million project that entails interconnection of the five independent power systems in the UAE are expected to be issued for bid in the fourth quarter of 2003. The project has been split into seven lots by MEW: four lots for the substation packages, two lots for the overhead line packages, and one lot for ENG monitoring center.

US companies share in the privatization of Abu Dhabi's power sector and supply of goods and services was quite significant until early 2002. Due to the deterioration of the power sector in the US, all American-based international developers pulled out of the UAE market. Currently, the US share is limited to supply and maintenance of gas turbines and some portions of the turbine cooling and heat recovery equipment. This may be justified by the lack of expertise of US companies in high scale combined cycle power and heat and membrane desalination. The higher prices of US companies can be attributed to higher quality and higher transport costs and is also an important factor making Korean, French, Chinese, and German companies more competitive in this market. However, the electricity sector will witness a steady annual growth of about 15 percent for the coming five years and local authorities are open to new methods and technologies to increase capacity and save cost. The UAE represents an attractive market and US companies would do well to target it.

Gas is heavily used for electrical generation in the UAE due to its availability and low price. Gas turbines and gas-operated steam turbines are widely used in power generation plants. In Abu Dhabi, the cost of generating one kW hour is seven cents, while the selling price is four cents to non-UAE nationals and commercial offices and two cents to UAE nationals.

US companies face fierce competition from French, Italian, British, German, Korean and Japanese companies.

There are no constraints on the import of power generation and water equipment in the UAE. A 5 percent tax applies to such equipment imported for sale in the country.

Major Sub-Sectors	Estimated Market Size
Desalination equipment	800
Gas and Steam Turbine and Parts	550
Water Supply/Distribution Systems	650
Power Transmission/Distribution Equipment	250
Irrigation Equipment	100
Switch-gear Motor/Engines	70

Data Table:

	2001	2002	2003
Total Market Size	2580	2880	2420
Total Local Production	0	0	0
Total Exports*	170	170	350
Total Imports	2750	3080	2570
Total Imports from US	550	450	350

The above statistics are unofficial estimates.
Exchange rate: USD1= 3.671 .
*Note: Re-exports indicated where total imports exceed market size.

Rank of Sector: 6
Name of Sector: Sporting Goods/Recreation Equipment
ITA Industry Code: SPT

Narrative:

With a per capita income of US $18,115 the UAE presents a very attractive market for the leisure/recreational industry. The large resident expatriate population (80 percent of total population) has a significant influence on the demand for sporting goods.

All five international airports in the UAE have registered a growth in both passenger and cargo movement. Total passengers using Dubai International Airport alone totaled 16 million persons in 2002. The country also gets numerous overland visitors from neighboring countries.

As the UAE wants to be known as a favored travel destination for business and pleasure, in mid- 2001, the UAE changed its visa entry policy to allow nationals of 33 countries to receive a visa upon arrival at no cost and for a maximum stay of 30 days. An additional 30 days can be applied for while in country. Visas for stays longer than two months must be applied for from overseas.

Today, both government and private companies are involved in building infrastructure to turn the UAE into a viable travel destination with theme parks, indoor family entertainment centers, "edutainment" centers, and hotels. Part of this infrastructure includes fitness centers, whose numbers have increased over the past decade, as residents become educated about healthier ways of living.

Theme park equipment presents great opportunities for further development and expansion because all equipment in this booming sector is imported. Actual value figures for recreational equipment are not reflected below as local statistics capture this category within "construction activities".

Innovative new products and increased promotional activity characterize this highly competitive market. Major competitors are Germany, China, Japan and the UK. Effective January 1, 2003, customs duty became 5 percent for all GCC countries.

The most promising sub-sectors within this sector, with the estimated 2003 Total Market Size of each in millions of US dollars:

Major Sub-Sectors	Estimated Market Size
Video Games	24.2
Fitness Equipment	16.5
Amusement Park/Outdoor Playground Equipment	11.0
Racquet Sports and Accessories	4.4
Golf Equipment	3.5
Soft Playgrounds	2.2
Fishing Equipment	1.7
Playing Cards	1.3
Hunting/Shooting Equipment	1.1

Data Table:

	2000	2001	2002
Total Market Size	78	98	110
Total Local Production	0	0	0
Total Exports*	29	30	31
Total Imports	107	128	141
Total Imports from US	12	14	15

The above statistics are unofficial estimates in millions of US dollars.
Exchange rate US $1 = 3.671
* Note: Re-exports indicated where total imports exceed market size.

Rank of Sector: 7
Name of Sector: Air Conditioning & Refrigeration
ITA Industry Code: ACR

Narrative:

The UAE combines three distinctive characteristics, which make it a key market for air conditioning equipment: high per capita income; extreme hot and humid climatic conditions; and relatively low electricity cost. The nature of the UAE climate makes air-conditioning a necessity, rather than luxury, as summer temperatures hit 100-112 degree Fahrenheit with high humidity and winter temperatures dipping to 65-85.

There are currently several new institutional development projects under construction. These will generate a higher demand for central air-conditioning systems. These new projects include high rise buildings, large scale five star hotels, and residential apartments.

The market demand for complex centrally packaged, air-cooled water chillers is constantly growing. The growth of the UAE air-conditioning industry has resulted in the establishment of major local manufacturers of central air-conditioning equipment.

The UAE market is very receptive to US central air conditioning equipment, because of its reputation for high quality, safety, brand recognition, and low maintenance requirements.

The most promising sub-sectors within this sector, with the estimated 2003 Total Market Size of each in millions of US dollars:

Major Sub-Sectors	Estimated Market Size
Central Air Conditioning	135
Mini Split Air Conditioning	48
Window Air Conditioning	67
Cold Storage Equipment	63

Data table:

	2001	2002	2003
Total Market Size	302	319	342
Total Local Production	36	37	40
Total Exports*	70	71	72
Total Imports	336	353	374
Total Imports from US	67	73	78

The above statistics are unofficial estimates in millions of US dollars.
Exchange rate: US $1 = 3.671
*Note: Re-exports indicated where total imports exceed market size.

Rank of sector: 8
Name of Sector: Building Products
ITA Industry Code: BLD

Narrative:

The construction industry is one of the most active sectors of the UAE economy. The UAE government will spend over US $20 billion over the next five years for the construction of new infrastructure projects and government, commercial, and residential buildings. The construction and tourism industries are the two major sectors of the local economy that will continue to generate a high demand for building products.

The market demand for building products is expected to grow rapidly as new construction tenders are floated by public and private sectors before 2003. Current projects include construction of new high-rise commercial/residential buildings, houses, hotels, beach resorts, hospitals, schools, roads, public parks, shopping malls, and expansion of two major international airports.

Local importers and distributors of building products indicate that US manufacturers/suppliers have an excellent reputation for supplying high-quality engineered products and foresee an increase in the US market share. The primary reason for this expected growth is due to the satisfaction among end-users with the quality of US building products.

The most promising sub-sectors within the building products sector, with the estimated 2003 Total Market Size of each in millions of US dollars:

Major Sub-Sectors	Estimated Market Size
Steel and iron bars	512
Wood & Wood Products	150
Plumbing Products	38
Hardware Products	97
Ceramic Products	44
Architectural Glass	35

Data table:

	2001	2002	2003
Total Market Size	917	951	1025
Total Local Production	75	78	84
Total Exports*	142	145	148
Total Imports	984	1018	1089
Total Imports from US	42	44	48

The above statistics are unofficial estimates in millions of US dollars.
Exchange rate: US $1 = 3.671
*Note: Re-exports indicated where total imports exceed market size.

Rank of Sector: 9
Name of Sector: Computers/Peripherals
ITA Industry Code: CPT

Narrative:

In the UAE, private and public sector entities try to keep pace with current technology and communication methods. Computers of US origin are seen as attractive buys for those wanting quality products, since the margin of pricing is negligible when compared to a locally assembled machine. US manufacturers are viewed as market leaders and will maintain their edge as long as they continue to introduce state-of-the-art technology and products at competitive prices. One factor that has expanded this market is the e-enablement of local government offices. The sole local Internet Service Provider (ISP) has also been trying to increase the number of users for Internet access, which has also helped the market. Growing awareness of the Internet's value has augmented the home PC market, which is expected to continue to increase. Local governments are placing much emphasis on Information Technology (IT) being made available in public schools. Computer assembly plants in the Jebel Al Free Zone (JAFZA) assemble Acer and Supra brands. Products brought into the UAE from JAFZA are considered imports.

The estimated recorded market share of 10 percent in 2002 for US imports into the UAE does not reflect the true picture, since US-branded computer products are also imported from factories located outside of the US. Hewlett-Packard now has a new manufacturing unit in Saudi Arabia. Major competitors are the United Kingdom (UK), the Netherlands, Japan, Taiwan, and China. There are no import restrictions for the computer industry. Effective January 1, 2003, the customs duty became 5 percent. US companies need to obtain US Government approval before exporting certain high-end computer equipment to the UAE.

The most promising sub-sectors within this sector, with the estimated 2003 Total Market Size of each in millions of US dollars:

Major Sub-Sectors	Estimated Market Size
Personal Computers	55
PC Notebooks	51
Networking Solutions	47
Computer Monitors	38
Multimedia Products/Upgrades	34
Modems	21
File Servers	19
Client Server Systems	17

Data Table:

	2001	2002	2003
Total Market Size	392	407	423
Total Local Production	0	0	0
Total Exports*	260	271	282
Total Imports	652	678	705
Total Imports from the US	79	83	87

The above statistics are unofficial estimates in millions of US dollars.
Exchange rate: US $1 = 3.671
* Note: Re-exports indicated where total imports exceed market size.

Rank of Sector: 10
Name of Sector: Safety and Security Equipment
ITA Industry Code: SEC

Narrative:

The UAE market offers excellent opportunities for US security systems and equipment firms, with the Ministry of Defense and the Ministry of Interior (including the Civil Defense Department, Border Guard and Coast Guard) as the main consumers. Dubai Airport is one of the busiest in the world and as a world class facility in the post-9/11 era, airport security is a top priority for the airport authority. Dubai's bustling ports are also interested in increased security, particularly as the Dubai Port Authority, which includes Dubai Customs, proceeds with the US Customs' Container Security Initiative.

The municipal police departments of Abu Dhabi and Dubai each have approximately 15,000 police officers, with Special Operations Commands and SWAT teams. The Dubai Police Department in particular is a modern one, preparing for the IMF/World Bank meetings in September 2003. The UAE is aware of the fast pace of improvements in security and police equipment and technologies worldwide and they wish to make the best use of the latest technologies. All agencies involved in security or law enforcement want the best tools available to do their jobs and are well funded for quality equipment. US safety and security systems and equipment enjoy a very good reputation in the UAE market, especially sophisticated high-tech equipment.

The UAE's coastline stretches for 1300 km and the UAE has numerous islands especially in the Emirate of Abu Dhabi. Like many prosperous nations located near less-prosperous nations, the UAE struggles to combat the smuggling of illegal aliens along its coastline. Coastal surveillance systems are generating significant interest for that purpose as well as for the security of the UAE's numerous offshore oil platforms. With new and modern marinas being established in the numerous beach resorts, luxury boat ownership has also been on the rise, offering very good opportunities for all types of marine security systems, including boat-locating systems, GPS navigation systems, collision avoidance systems, and low-light or night-vision devices.

Security officials are continuously developing new plans to improve security around sensitive areas and installations, as well as to protect prominent government officials. These plans usually require identification and access control equipment, perimeter security, monitoring and control devices, video monitors, CCTV cameras, warning and signaling devices, personal protection devices and accessories, armored and emergency response vehicles, and checking, searching and investigation equipment, including x-ray inspection equipment.

There is a fast-growing awareness about the need for up-to-date commercial and personal security and safety systems, combined with a surge in infrastructure development in both the public and private sectors. The increase in visitors, including those for global meetings, keen interest in the latest technological developments, and the UAE government's concern for the security of their residents all combine to add momentum to the expected growth in this sector over the next few years. Many UAE residents are now taking steps to better secure their homes and business establishments. This will also add to the substantial market growth expected over the next several years. Industry sources have reported 10-15% growth in the Security and

Safety sector over the last two years and expect that this growth will continue.

The International Commercial Security, Fire and Safety Exhibition and Conference (INTERSEC) in Dubai in January 2003 featured 125 exhibitors. INTERSEC 2004 is scheduled for January 25-27, 2004. A new trade show, Security & Safety Middle East, will debut in Abu Dhabi in the fall of 2003. The emirate of Sharjah will host MEPOL, in February 2004 at the Sharjah Expo Centre. MEPOL will be supported by the US Department of Commerce and will specialize in safety and security products used by internal state security police, military, customs, civil defense, airports, and seaports.

Information regarding upcoming "security-related" projects is difficult to obtain, because the UAE government does not release information regarding the scope or dollar value of its security projects. There are no real barriers for the import of security equipment into the country; however, the import of certain weapons and the installation of communications intercept and surveillance systems require prior permission from the Ministry of Interior. In addition, most crime control equipment requires US Department of Commerce or US Department of State export licenses for export from the US to the UAE. The US Commercial Service in Abu Dhabi has its own export control officer to advise US companies.

In most cases, US security and safety firms will not deal directly with the agencies for the purchase of equipment. It is standard practice here for these agencies to issue tenders and seek bids from commercial companies to acquire products for resale to the government agencies. It is imperative that US firms be careful in selecting a local company to maximize opportunities to approach government ministries and equally imperative to be sensitive to the relationship the local firm has with the government agencies. Failure to perform or delayed performance can result in heavy fines and blacklisting for the local firms and this can have an adverse impact on opportunities for US firms.

Data Table:

	2001	2002	2003
Total Market Size	254	285	327
Total Local Production	0	0	0
Total Exports*	5	8	9
Total Imports	259	293	336
Total Imports from US	27	32	37

The above statistics are unofficial estimates in millions of dollars.

Agricultural Products and Services

Given its arid climate and desert terrain, the UAE is heavily dependent on imported food products and commodities. Despite anti-American sentiment and some calls for boycott of US food products during the past three years, US agricultural exports remain strong - exceeding the record established in 2001 by 0.5 percent. A broad range of US products holds significant potential as they are recognized for their high quality. US suppliers should be cognizant of the fact that because this is a relatively small market, orders for new-to-market products may lack the volume they desire for an initial sale. It should be noted that all consumer-ready products are subject to production and expiration dating imprinted on the original label. Effective January 1, 2003, the UAE implemented the GCC five percent harmonized tariff on most foods. Primary staple commodities are exempt from this duty.

Live US horses are among the most valuable US agricultural export to the UAE. With just a few families truly involved in this business (led by the Al Maktoums of Dubai, followed by the Al Nahyan family in Abu Dhabi) and UAE-owned farms in the US involved in horse trading, training, and racing, this is a very narrowly focused market. Equine veterinary products enjoy a strong market having their own

Other best prospects for US agricultural exports are as follows:

1. Almonds

US shelled almonds lead the almond market and are recognized for their incomparable quality. Nearly half of the almonds the UAE imports are, in turn, re-exported to India and other GCC states. With Indian import policies being liberalized, a dampening effect on Dubai's re-export business is likely over time. Iran is the primary competitor for the US in the UAE almond market.

	2001	2002	2003
Total Market Size*	7000	7000	7200
Total Local Production	0	0	0
Total Exports	6000	6100	6500
Total Imports	13000	13100	13700
Total Imports from the US	10000	10000	10200

* Note: All statistics are in metric tons

2. Corn Oil

Corn oil is the cooking oil of choice in the Gulf region and the US is the largest supplier. Even corn oil not sourced directly from the US is most likely US origin. The US ships lesser amounts of sunflower-seed and soybean oils. The UAE re-exports considerable volumes - similar in quantity to the volume of imports - of blended oils to markets stretching from Somalia to Turkmenistan.

	2001	2002	2003
Total Market Size*	7500	7500	8000
Total Local Production	0	0	0
Total Exports	2500	2500	3000
Total Imports	10000	10000	11000
Total Imports from the US	6000	6500	6500

* Note: All statistics are in metric tons

3. Fresh/Chilled/Frozen Beef

The UAE market preference is for lamb, mutton and goat meat. US beef exported to the UAE is mostly US Choice destined for 5-star hotel restaurant use. Casual dining and quick service restaurants expanding across Dubai and Abu Dhabi demand more processed meats. The US market share in inexpensive red meats is not large due to the imports from India, Australia, and New Zealand. Until the EU resolves its problems with BSE and Foot-and-Mouth Disease, its meat will remain banned by the UAE and the other Gulf States. US red meats, including higher grades than USDA Choice, have potential, but those markets must be cultivated. UAE local red meat production is negligible, but some re-export of processed frozen beef to Saudi Arabia is taking place.

	2001	20012	2003
Total Market Size*	25000	25000	25500
Total Local Production	0	0	0
Total Exports	8000	8500	8500
Total Imports	33000	33000	34000
Total Imports from the US	550	675	800

* Note: All statistics are in metric tons

4. Apples

US Red Delicious apples are recognized as the best apple available. Global competition is keen, however, and other varieties such as fuji, golden delicious, and gala, are making headway into the Red Delicious apples' dominant market position. US competitors in the apple market include Iran, Chile, France and China. Iran dominates the market, holding a 60 percent market share behind its golden apples. Dubai remains the entry point into the region, as 60 percent of imports are re-exported. Major destinations include the GCC, especially Saudi Arabia, and other markets in the greater region, notably Egypt.

	2001	2002	2003
Total Market Size*	75000	75000	76000
Total Local Production	0	0	0
Total Exports	30000	31000	32000
Total Imports	105000	106000	108000
Total Imports from the US	21000	22000	24000

* Note: All statistics are in metric tons

5. Frozen Chicken

Danish, French and Brazilian chicken are the dominant market leaders in the UAE poultry market. However, US suppliers of whole birds and parts, specifically leg quarters, have a growing share of the market. Processed chicken parts for casual and quick service dining, as well as for the overall HRI sector, offer good potential markets for US processed chicken parts.

	2001	2002	2003
Total Market Size*	115000	118000	120000
Total Local Production	25000	28000	30000
Total Exports	45000	45000	46000
Total Imports	135000	135000	136000
Total Imports from the US	26000	22000	20000

* Note: All statistics are in metric tons

Note: Quantity data for 2002 and 2003 total imports for UAE in all tables are ATO Dubai estimates.